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AUTHORITY

AGO D/A ltr, 29 Apr 1980

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DEPARTMENT OF THE ARMY  
OFFICE OF THE ADJUTANT GENERAL  
WASHINGTON, D.C. 20310

*John*  
*20*

IN REPLY REFER TO

AGDA (M) (15 Jun 70)

FOR OT UT 701152

18 June 1970

SUBJECT: Operational Report - Lessons Learned, Headquarters, Phu Lam  
Signal Battalion, Period Ending 31 January 1970

SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation in accordance with paragraph 4b, AR 525-15. Information of actions initiated as a result of subject report should be forwarded to ACSFOR OT UT within 90 days of receipt of covering letter.

2. Information contained in this report is provided to insure appropriate benefits in the future from lessons learned during current operations and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

*Kenneth G. Wickham*

KENNETH G. WICKHAM  
Major General, USA  
The Adjutant General



1 Incl  
as

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AD No. \_\_\_\_\_  
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12-541904  
11-11-69

DEPARTMENT OF THE ARMY  
HQS, PHU LAM SIGNAL BATTALION (USASTRATCOM) (PROVISIONAL)  
APO San Francisco 96243

RGPLMB-S3

4 February 1970

SUBJECT: Operational Report-Lessons Learned of the Phu Lam  
Signal Battalion for Period Ending 31 January 1970.  
RCS CSFOR-65 (R2)

TO: SEE DISTRIBUTION

1. Section 1 Operations: Significant Activities.

a. The Phu Lam Signal Battalion BA QUEO Satellite Communications Terminal surpassed the previous world record for continuous operation of an AN/MS-46 Satellite Terminal by completing a total of one thousand nine hundred and seventy-six hours (1,976) and fourteen minutes (14) availability before experiencing an equipment malfunction. The previous world record of one thousand eight hundred and ninety-six hours (1,896) and forty minutes (40) was also set by the BA QUEO Terminal. For this outstanding achievement, the BA QUEO Terminal was selected as the most outstanding DCA facility in the Pacific area and nominated by DCA-PAC to DCA as the most outstanding DCA Facility in the Worldwide Defense Communications System.

b. The Saigon AN/FTC-31 Special Data Quality Switching Facility provided special data quality communications to validated Saigon area subscribers and to visiting Department of Defense dignitaries on an on-call basis. The facility also operated a DCA Network Coordinating Station that provided network control for the entire Special Data Quality System-Republic of Vietnam.

c. Seventy-four (74) personnel of which twelve (12) were officers and sixty-two (62) were enlisted personnel, representing eighteen (18) organizations, attended the sixth AUTODIN Seminar which was held at Phu Lam in December 1969. The seminar, one of the Phu Lam ASC's most effective programs in providing subscriber assistance, is designed to cover all areas of the ASC in regards to procedures, operations and maintenance.

d. The Overseas AUTODIN System Efficiency report for the twelve (12) month period of 1969 has been published and has indicated that Phu Lam ASC maintained a 99.8% systems efficiency which was highest among the seven Automatic Switching Centers in the Pacific Overseas Area.

FOR OT UT  
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e. During the period 22 January 1970 through 24 January 1970, an upgrade of the Phu Lam power system was accomplished. This upgrade provided Phu Lam ASC with back-up commercial power; in the event that Power Plant 1 malfunctions Power Plant 2 can provide the necessary power for the system to operate. In the process of switching from one power station to another during the up-grade the ASC was required to operate on battery power for approximately thirty (30) minutes. This is significant because it was double the capacity specified in the technical manuals. The experience in extended battery power use will aid the OIC Phu Lam ASC in making decisions on when to power down the system if a real hazardous condition exists and no commercial power is available.

f. The Area Maintenance and Supply Facility assumed the responsibility for supplies and off-site maintenance support for the Node V terminal effective 10 January 1970. The ASC repair parts and equipment were laterally transferred to the AMSF on 7 January 1970. The ASC will continue to have quality control assistance teams to send to the terminals on a requested basis.

**2. Section 2 Lesson Learned: Commanders Observation, Evaluation and Recommendation.**

**a. Personnel**

**(1) AN/FTC-31/SEVAC Maintenance Personnel**

(a) Observation: The Saigon AN/FTC-31 Switching Facility has been unable to obtain its authorized quota of school trained AN/FTC-31/SEVAC repairman.

(b) Evaluation: The MOS for school-trained AN/FTC-31/SEVAC repairmen is 36H with an additional skill indicator of K8. An MOS 36H repairman without the additional skill indicator of K8 is not trained on solid state switching circuitry which is used in the AN/FTC-31/SEVAC Dial Control Exchange. School-trained personnel with MOS of 36H but without the additional skill indicator of K8 are normally assigned to this facility as AN/FTC-31/SEVAC repairmen.

(c) Recommendation: When schooltrained AN/FTC-31/SEVAC repairmen are not available, that MOS 34D ADPS computer repairmen be assigned to cross train as AN/FTC-31/SEVAC repairmen because of their training on solid state circuitry. It takes a shorter period of time for an MOS 34D repairman to reach job proficiency through on-the-job training as compared to an MOS 36H repairman without the additional skill indicator K8.

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**(2) Refrigeration Specialists for AN/NSC-46 Satellite  
Communications Terminals.**

**(a) Observation: Refrigeration Specialist 51L are not  
trained on the type of Air Conditioners employed in the AN/  
NSC-46.**

**(b) Evaluation: Refrigeration Specialist 51L are not  
qualified to perform anything higher than 2nd echelon main-  
tenance on the air conditioners employed on the AN/NSC-46  
because of the high degree of complexity utilized in the  
control circuitry. Refrigeration Specialists 51L do not  
have enough background in electric circuit trouble shooting  
to be crosstrained effectively. This also is true with  
Refrigeration Specialist at Depot level; therefore, it has  
been necessary to crosstrain Satellite Equipment Repairmen  
26Y as Refrigeration Specialists. Because of their exten-  
sive training in electronic trouble shooting, Satellite  
Equipment Repairmen 26Y need only be crosstrained on the  
refrigeration portion of the air conditioners.**

**(c) Recommendation: When Satellite Equipment Repairmen  
26Y are being school trained a short course in refrigeration  
be included. The sensitivity of the equipment in the AN/NSC-  
46 will not tolerate much of a temperature change nor will it  
tolerate high humidity levels. By training Satellite Equip-  
ment Repairmen 26Y in air conditioning it will insure that  
there will always be an air conditioning man on site to cope  
with any problem that may occur.**

**b. Intelligence: None**

**c. Operations**

**(1) Duplication of Data Surveys**

**(a) Observation: Periodically various Departments and  
Agencies under the jurisdiction of the Department of Defense  
conduct surveys to compile data that is, beyond any doubt,  
necessary so that these various Departments and Agencies may  
be able to respond to any requirement that may be placed upon  
them by higher authority.**

**(b) Evaluation: There is a definite need for periodic  
surveys in order to determine the following: Where a unit is  
physically located; what kind of equipment is utilized in what  
quantities, and in which configuration; what is the units pre-  
sent mission; how many personnel of what MOS's are required  
and authorized and present; are all these items employed to  
give maximum capability and/or flexibility?**

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In the recent Comsea Data Collection Survey ordered by the Department of the Army over seventy-five percent of all data collected from the Phu Lam Signal Battalion was obtained directly out of the unit file copy of the Credata Report. The Credata Report was ordered by the Defense Communications Agency during the second quarter 1970. This duplication of Data Collection effort was costly both financially and in man hours consumed.

(c) **Recommendation:** That Departments and Agencies under the Jurisdiction of the Department of Defense query each other for data prior to conducting Area, Theater or Army wide surveys. The cost both financial and in man hours expended in Data Collection can thereby be greatly reduced.

(2) **Loss of Secure Voice Communications**

(a) **Observation:** It has been observed at this station that the KOI-1 and KOI-1A/TSEC Card Reader associated with KG-13 jacks have a tendency to become corroded. This takes place even in a controlled environment to the extent of electrical contact loss and system failure.

(b) **Evaluation:** Partial or Total loss of contact due to corrosion will cause difficulty in running up the circuits and cause multiple attempts to be made before synchronization is achieved. This could lead to excessive circuit outage.

(c) **Recommendation:** That the KOI-1 and the KOI-1A Card Readers be removed and the jacks be cleaned with a suitable cleaner as part of the scheduled monthly preventive maintenance.

(3) **Receipt of Telecommunications Service Orders (TSO's)**

(a) **Observation:** Telecommunications Service Orders (TSO's) received at Phu Lam ASC for circuit activations are incomplete.

(b) **Evaluation:** The Telecommunications Service Order is the official source and authority for circuit starts, changes, discontinued actions to be implemented by the Phu Lam ASC. Paragraph six (6) is rarely included upon issuance of a Telecommunications Service Order. Paragraph six (6) contains all channel parameters necessary for update of ASC's program tape, which is normally loaded only on Monday of each week. Lack of this information causes activation delays.

(c) **Recommendations:** That Command interest be given to the problem of incomplete and untimely Telecommunications Service Orders.

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(4) Special Data Quality Narrowband Subscriber Terminals.

(a) Observation: A common problem with narrowband subscriber terminals is a synchronous inhibit indication while attempting to go secure with the distant party.

(b) Evaluation: This problem is often traced to the CLA circuit located in the switching and control subsystem by maintenance personnel because the "E" lead of the single frequency unit is generating an improper signal. However, replacement of the CLA circuit board does not correct the fault.

(c) Recommendation: That the signal being received by the terminal be checked for proper level. If the input signal to the single frequency signaling unit is too high, the signaling unit will generate a false "E" lead detection which is one of the inputs to the CLA circuit board and cause a synchronous inhibit indication.

(5) PU 495/G Power Generators associated with the AN/MS-46 Satellite Terminal.

(a) Observation: There are four (4) PU 495/G power generators associated with an AN/MS-46 Satellite Terminal of which two are required to be operating on-line at all times IAW normal operating procedures.

(b) Evaluation: Normal operating procedures requiring two generators to operate in a parallel mode of operation at all times causes each generator to assume approximately 50% of the total load. As a result, fuel injectors on each generator accumulates carbon which gradually reduces the total load capacity of each generator.

(c) Recommendation: That each generator be loaded to 75% capacity or near to full load as possible for several hours each month to prevent carbon accumulation on fuel injectors.

(6) Need for up grade of JOSS back-up power.

(a) Observation: Commercial power loss results in loss of 130V DC ringing voltage and talk battery circuit plates located in the Dial Central Office.

(b) Evaluation: Presently the 130V DC is supplied by commercial power (contractor operated station power plant) through a Flotrol DC Rectifier system. Loss of AC caused loss of DC power to the circuit plates since this rectifier cannot be powered by the back-up battery system.



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(c) **Recommendation:** A backup 130V DC power source with automatic (NO BREAK) switching for the 130V DC power be provided.

d. **Organization:** None

e. **Training:** During the quarter ending 31 January 1970 the Phu Lam Signal Battalion engaged in training and operations a total of ninety-two (92) days.

f. **Logistics:**

(1) **Critical within the AUTODIN authorized stockage list.**

(a) **Observation:** Contractor records indicate that one hundred and thirty-five (135) pinch roller assembly and seventy-two (72) Brush assembly were used during the past year. The ASL is designed to supply parts for six months. The ASL for the two parts mentioned are as follows:

- (i) 5895-050-1405 Pinch Roller Assembly 30 each
- (ii) 7440-420-5154 Brush Assembly, Motor 1 each

(b) **Evaluation:** The environmental conditions at this ASC have contributed to a higher than normal failure rate of certain parts. These parts are for use in the Tape Transport. The lack of these parts would cause a transport to be deadlined if the item failed. The system has eighteen tape transports; twelve transports are considered essential to run the system. The failure rate of these items is such that system operation could be hampered.

(c) **Recommendation:** That the pinch roller level be raised to seventy-five (75) and the brush level to forty (40). The present levels will result in equipment down time and immediate action should be taken to obtain an increased level of these repair parts.

g. **Communications:** None

h. **Material:** None

i. **Others:** None



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RCS CSFOR-65 (R2)

1 Incl  
Organizational  
Structure

*William E. Lewis*  
WILLIAM E. LEWIS  
LTC, SigC  
Commanding

DISTRIBUTION:

9-Reg Comm Gp (V)  
1-CG, 1st Sig Bde, ATTN: SCCPV-OP  
3-CG, USARV, ATTN: DST  
1-CG, USASTRATCOM-PAC  
2-CINCUSAPAC, ATTN: GROP-DT

SCCPV-RG-PT-MO (4 Feb 70) 1st Ind

SUBJECT: Operational Report - Lessons Learned of the Phu Lam Signal Battalion for Period Ending 31 Jan 70, RCS CSFOR-65 (R2)

Headquarters, USASTRATCOM Regional Communications Group (Vietnam),  
APO 96243, 28 February 1970

TO: Assistant Chief of Staff for Force Development, Department of the Army, Washington D.C. 20310  
Commanding General, 1st Sig Bde (USASTRATCOM), ATTN: SCCPV-OP-AD,  
APO 96384

1. Subject report is forwarded in accordance with AR 525-15.
2. This headquarters has reviewed the report and basically concurs with it.
3. Following are corrections and/or comments concerning referenced paragraphs:

a. All pages, except the cover page, should be numbered.

b. Section 2, Lessons Learned: Para 2f(1), Page 5: Critical within the AUTODIN authorized stockage list - If the ASL were designed to supply parts for six (5) months as stated in Phu Lam's observation, then a simple computation of stockage level in accordance with para 13-13, AR 611-16, would prescribe stockage levels of 68 pinch rollers and 36 brush assemblies. Since Phu Lam's ASL is based on a 60 day supply level, the computation of stockage quantity provides 32 and 12 items respectively. There is no indication in Phu Lam's report that 60 days allows insufficient order and ship time. If an increase in quantity (above the 60 day level) is critical to the mission, then the installation commander may authorize the increased quantity. Phu Lam Signal Battalion will be instructed as such by this headquarters.

*W. D. Lewis*

WILLIAM D. LEWIS  
LTC, SigC  
Deputy Commander

SCCPV-OP-AD (4 Feb 70) 2d Ind

SUBJECT: Operational Report - Lessons Learned of Headquarters, Phu Lam  
Signal Battalion for Period Ending 31 January 1970, NOS CSFOR-  
65 (R2)

DA, HQ, 1st Signal Brigade (USASTRATCOM), APO 96384 10 March 1970


TO: Commanding General, United States Army, Vietnam, ATTN: AVHGC-DST,  
APO 96375

1. Subject report is forwarded in accordance with AR 525-15.
2. The following comments are made:

a. Reference item "Receipt of Telecommunications Service Orders (TSO's), Para 2c(3), Page 4: Failure to receive para 6 of TSO has been discussed with DCA-S&I. DCA-S&I has conducted a complete review to insure para 6 (channel and light number parameters) is issued with the TSO. The new procedure is working satisfactorily. No further action required.

b. Concur with para 30, 1st Indorsement except that part as reads "in accordance with para 13-13, AR 611-16 " should be changed to read "in accordance with para 13-13, AR 711-16."

FOR THE COMMANDER:

  
O. V. CONERRE  
Major, AGC  
Adjutant General

CF:

Commanding General, U. S. Army Strategic Communications Command, ATTN:  
SCC-OPS-RT, Fort Huachuca, Arizona 85613  
Commanding Officer, USA Regional Communications Group, APO 96243  
Commanding Officer, Phu Lam Signal Battalion, APO 96243

AVHGC-DST (4 Feb 70) 3d Ind

SUBJECT: Operational Report-Lessons Learned of the Phu Lam Signal  
Battalion for Period Ending 31 January 1970. RCS CSFOR-65 (R2)

Headquarters, United States Army, Vietnam, APO San Francisco 96375 29 MAR 1970

THRU: Commanding General, United States Army Strategic Communications  
Command-Pacific, APO 96557

TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT,  
APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 January 1970 from Headquarters, Phu Lam Signal Battalion (USASTRATCOM) (Provisional) and concurs with the comments of indorsing headquarters.

2. Comments follow:

a. Reference item concerning "Telecommunications Service Orders (TSO's)", page 4, paragraph 2c(3): concur. MACV's assistance has been requested which should insure timely response of TSO's issued by DCA-SAM.

b. Reference item concerning "Need for Upgrade of JOSS back-up power", page 5, paragraph c(6): concur. Equipment required to allow continued 130V DC ringing voltage and power to talk battery circuit plates is contained on existing BOM for the Phu Lam JOSS Station Battery Project (Class IV). The 1st Signal Brigade CSEMA has requested USASTRATCOM-PACFO to expedite the RVN delivery of BOM items for this project. Station batteries have been deleted from the BOM requirement due to in-country procurement. USARV C-E has requested a 1st Signal Brigade follow-up message to PACFO to determine EDD of required ancillary equipments for emergency back-up station battery (PLM).

FOR THE COMMANDER:



C. E. MICHELS

MAJ, AGC

Assistant Adjutant General

Cy furn:

HQ, 1st Sig Bde

HQ, Phu Lam Sig Bn

SCCP-OP3 (4 Feb 70) 4th Ind

SUBJECT: Operational Report - Lessons Learned of the Phu Lam  
Signal Battalion for Period Ending 31 January 1970  
RCS CSFOR-65 (R2)

Headquarters, United States Army Strategic Communications  
Command-Pacific, APO San Francisco 96557 23 APR 1970

TO: Commander in Chief, United States Army, Pacific, ATTN:  
GPOP-DT, APO 96558

1. Subject report is forwarded in accordance with AR 525-15.
2. This headquarters has reviewed subject report and offers the following comments:

a. Reference paragraph 2c(5), page 5, basic report: Concur with recommendation to improve operation and reduce maintenance (and repair) requirements of PU 495/G Power Generators by loading generators to a minimum of 75 percent of their capacities. However, recommend that this loading be continuous as practicable in lieu of several hours each month. In order to accomplish this, recommend that portable, variable load banks be furnished with the AN/MS-46 terminals. The total capacity of the load banks should be at least equal to the capacity of one diesel generator unit. This will provide for periodic testing of the diesel generator under load without jeopardizing the communications operation. Recommend that this item be referred to the SATCOM Agency for further evaluation and consideration for adoption.

b. Reference paragraph 2c(6), pages 6-7, basic report and paragraph 2b, 3d Indorsement: The Bill of Materials to furnish the Phu Lam JOSS station battery upgrade has been DA OTAG published and all material for the project has been obtained and shipped to Southeast Asia except for the 20-cycle ringing generator which operates from the 48V battery supply. U. S. Army Communications System Agency anticipates that this item will arrive at Sacramento Army Depot on the 17th of April with anticipated shipment to the Pacific Field Office (PACFO) ten days later.

SCCP-OP3

23 APR 1970

SUBJECT: Operational Report - Lessons Learned of the Phu Lam  
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c. Concur with the remainder of the report as indorsed.

FOR THE COMMANDER:

*Frank C. Mahin*

FRANK C. MAHIN

COL, GS

Chief of Staff

*Col Sig C*

*Deputy Commander*

CF:

CG, USARV, APO 96375 (wo incl)

CG, 1st Sig Bde (USASTRATCOM), APO 96384 (wo incl)

CO, Regional Comm Gp (USASTRATCOM), APO 96243 (wo incl)

CO, Phu Lam Sig Bn (USASTRATCOM), APO 96243 (wo incl)

GPOP-DT (4 Feb 70) 5th Ind

SUBJECT: Operational Report of HQ, Phu Lam Signal Battalion for Period  
Ending 31 January 1970, RCS CSFOR-65 (R2)

HQ, US Army, Pacific, APO San Francisco 96558 27 APR 70

THRU: Commanding General, US Army Strategic Communications Command,  
Fort Huachuca, Arizona 85613

TO: Assistant Chief of Staff for Force Development, Department of the  
Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER IN CHIEF:

  
D.D. CLINE  
2LT, AGC  
Asst AG

CF:  
DA, ACSFOR  
CG, USASTRATCOM-PAC



SCC-PO (4 Feb 70) 6th Ind

SUBJECT: Operational Report of HQ, Phu Lam Signal Battalion for Period  
Ending 31 January 1970, RCS CSFOR-65 (R2)

HQ, US Army Strategic Communications Command, Ft Huachuca, AZ 85613

4 MAY 1970

TO: Assistant Chief of Staff for Force Development, Department of the  
Army, Washington, D. C. 20310

This headquarters concurs in subject report as indorsed.

FOR THE COMMANDER:

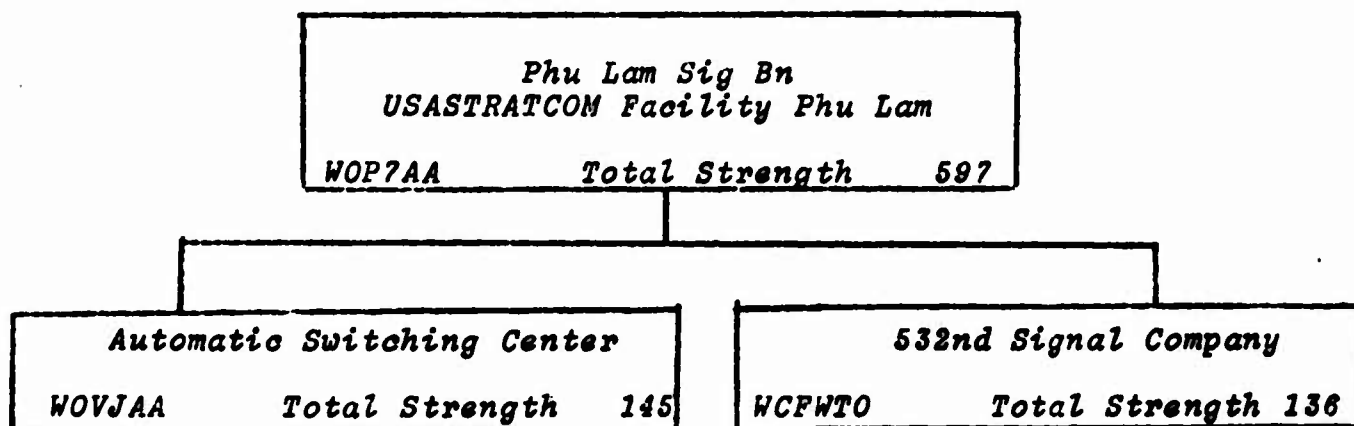
*for* *W. G. Alderson*  
W. O. POLSTON  
Maj, AGC  
Asst Adj Gen

RGPLMB-S3

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*Organizational Structure*



INCLOSURE # 1

**UNCLASSIFIED**

**Security Classification**

**DOCUMENT CONTROL DATA - R & D**

*(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)*

1. ORIGINATING ACTIVITY (Corporate author)

HQ, OACSFOR, DA, Washington, D.C. 20310

2a. REPORT SECURITY CLASSIFICATION

**UNCLASSIFIED**

2b. GROUP

3. REPORT TITLE

Operational Report - Lessons Learned, HQ, Phu Lam Signal Battalion

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)

Experiences of unit engaged in counterinsurgency operations, 1 Nov 69 to 31 Jan 70.

5. AUTHOR(S) (First name, middle initial, last name)

CO, Phu Lam Signal Battalion

6. REPORT DATE

4 February 1970

7a. TOTAL NO. OF PAGES

18

7b. NO. OF REFS

8a. CONTRACT OR GRANT NO.

a. PROJECT NO.

N/A

9a. ORIGINATOR'S REPORT NUMBER(S)

701152

9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)

10. DISTRIBUTION STATEMENT

11. SUPPLEMENTARY NOTES

N/A

12. SPONSORING MILITARY ACTIVITY

OACSFOR, DA, Washington, D.C. 20310

13. ABSTRACT